REMARKS/ARGUMENTS

Claims 1, 3, 4, 6-12 and 17-32 are currently pending. Claims 20-30 have been withdrawn and claims 1, 3, 4, 6-12, 17-19, 31 and 32 are rejected. Applicants have cancelled claims 3 and 4. Applicants respectfully request reconsideration and allowance of claims 1, 6-12, 17-19, 31 and 32 in view of the following arguments.

Claims 3 and 4 stand objected to as being improperly dependent upon claim 1. In response, Applicants have cancelled these claims rendering this objection moot.

Claims 1, 3, 4, 6-10, 12, 17-19, 31 and 32 are again rejected under 35 U.S.C § 103(a) as being unpatentable over WO 93/19115 in view of Lihme et al. (US 5,866,006) (Lihme). Applicants respectfully disagree.

The present Office action in Section 8 states: "Applicants argue that Lihme teaches fluidized bed chromatography while WO'115 discloses packed bed chromatography. The Examiner respectfully disagrees. Both WO'115 and Lihme are concerned to fluidized bed chromatography, namely liquid chromatography (see WO'115, page 4, line 2 and Lihme, column 9, lines 1-2)". Applicants first submit that liquid chromatography is a broad term which embraces both fluidized bed chromatography and packed bed chromatography. Applicants submit that WO'115 is not concerned with fluidized bed chromatography but rather packed bed chromatography (HPLC is packed bed chromatography, see also WO'115, page 3, line 13 from bottom).

Fundamental differences exist between fluidized bed chromatography and packed bed chromatography, and a combination of the references is improper.

Applicants submit that liquid chromatography is a broad term which embraces various operating modes, each presents its own problems and requires specific conditions. Packed bed chromatography is an operating mode where usually a slurry of particles is provided in a column and allowed to settle as a densely packed particle bed; liquid is then passed through the column by addition at the top and exit at the bottom. As is easily realized, as gravity and the pumping of liquid are in the same direction, a pressure will gradually build up during the process, which reduces the flow of liquid and hence the efficiency of the process. The pressure drop will depend on the size of the interstitial openings between the particles, which is a function of the particle mean size, the width of the size distribution and the density of the packing. During operation, the sample will be applied to the column as a narrow zone, separating into several narrow bands. In HPLC (high performance liquid chromatography, a kind of packed bed liquid chromatography), the size of the particles is kept low (around 10 micron or lower) in order to get a rapid mass transport and hence a narrow band width.

Fluidized bed chromatography on the other hand is based on the reverse principle - the particles are provided in a column, but fluid is passed across in the opposite direction, inlet at bottom and outlet at the top. Meaning the particles are fluidized or floating on the liquid flow, and the weight (density) of the particles will affect the performance of the process. Fluidized bed chromatography cannot be used in HPLC

applications because of the convection involved (the bands will be very wide due to the mixing effect).

Applicants submit that Lihme et al. relates specifically to fluidized bed chromatography, where there is no need for the beads to have the rigidity and flow properties for packed bed chromatography, because unlike in a packed bed where pressure drop appears when a liquid passes across a packed bed, in fluidized bed chromatography the beads float on the liquid. The conglomerates made by Lihme et al. avoid uncontrolled sedimentation or flotation, which are not problems in a packed bed – such as the current invention.

Because of the fundamental differences between fluidized bed chromatography and packed bed chromatography, it is Applicants' position that a skilled person would not consider a combination of references that teach each of them, respectively. There is no motivation to combine two references that operate under opposing principals, e.g. WO'115 with that of Lihme et al., other then with hind sight and the teaching of claimed invention.

In view of the foregoing, Applicants respectfully submit the Examiner's rejections cannot be sustained and should be withdrawn.

Claim 11 stand rejected under 35 U.S.C § 103(a) as being unpatentable over WO 93/19115 in view of Lihme et al. as applied to claim 1, further in view of Torobin (US 5,212,143). Applicants respectfully disagree. Applicants submit that as discussed above, the rejection of claim 1 over the combination of WO'115 and Lihme et al. should be

withdrawn. As such, Applicants submit that the rejection of claim 11 further in view of Torobin should also be withdrawn.

In view of the foregoing, Applicants respectfully assert the Examiner's rejection can not be sustained and should be withdrawn. Applicants believe that claims 1, 6-12, 17-19, 31 and 32, are in allowable form and earnestly solicit their allowance.

Respectfully submitted,

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